

CLAIMS

1. A nickel electrode for an alkaline storage battery in which an active material mainly containing nickel hydroxide is applied to a porous sintered nickel substrate, characterized in that a coating layer containing at least one hydroxide of an element selected from a group consisting of strontium Sr, scandium Sc, yttrium Y, lanthanoid, and bismuth Bi is formed on a surface of the active material formed on the porous sintered nickel substrate.

2. A nickel electrode for an alkaline storage battery in which an active material mainly containing nickel hydroxide is applied to a porous sintered nickel substrate, characterized in that a coating layer containing cobalt together with at least one hydroxide of an element selected from a group consisting of calcium Ca, strontium Sr, scandium Sc, yttrium Y, lanthanoid, and bismuth Bi is formed on a surface of the active material formed on the porous sintered nickel substrate.

3. The nickel electrode for an alkaline storage battery according to claim 2, characterized in that said coating layer containing cobalt is heat-treated in the presence of alkali and oxygen.

4. The nickel electrode for an alkaline storage

battery according to claim 1, characterized in that said lanthanoid is at least one element selected from the group consisting of lanthanum La, cerium Ce, praseodymium Pr, neodymium Nd, europium Eu, and ytterbium Yb.

5. The nickel electrode for an alkaline storage battery according to claim 1, characterized in that an amount of said hydroxide in the coating layer is in the range of 0.5 to 5 wt% based on the total amount of all the applied materials which includes the active material mainly containing nickel hydroxide.

6. A method of producing a nickel electrode for an alkaline storage battery, characterized in that it comprises the steps of:

applying an active material mainly containing nickel hydroxide to a porous sintered nickel substrate; and forming a coating layer containing at least one hydroxide of an element selected from a group consisting of strontium Sr, scandium Sc, yttrium Y, lanthanoid, and bismuth Bi on a surface of the active material thus applied to the porous sintered nickel substrate.

7. A method of producing a nickel electrode for an alkaline storage battery, characterized in that it comprises the steps of:

applying an active material mainly containing nickel hydroxide to a porous sintered nickel substrate; and

forming a coating layer containing cobalt together with at least one hydroxide of an element selected from a group consisting of calcium Ca, strontium Sr, scandium Sc, yttrium Y, lanthanoid, and bismuth Bi on a surface of the active material thus applied to the porous sintered nickel substrate.

8. The method of producing a nickel electrode for an alkaline storage battery according to claim 7, characterized in that said coating layer containing cobalt is heat-treated in the presence of alkali and oxygen.

9. The method of producing a nickel electrode for an alkaline storage battery according to claim 6, characterized in that said lanthanoid is at least one element selected from the group consisting of lanthanum La, cerium Ce, praseodymium Pr, neodymium Nd, europium Eu, and ytterbium Yb.

10. The method of producing a nickel electrode for an alkaline storage battery according to claim 6, characterized in that an amount of said hydroxide in the coating layer is set in the range of 0.5 to 5 wt% based on the total amount of all the applied materials which includes the active material mainly containing nickel hydroxide.

11. An alkaline storage battery characterized in that the nickel electrode for an alkaline storage battery

according to claim 1 is used as its positive electrode.

12. A nickel electrode for an alkaline storage battery in which an active material mainly containing nickel hydroxide is applied to a porous sintered nickel substrate, characterized in that an intermediate layer containing at least one hydroxide of an element selected from a group consisting of calcium Ca, strontium Sr, scandium Sc, yttrium Y, lanthanoid, and bismuth Bi is formed between the porous sintered nickel substrate and the active material.

13. The nickel electrode for an alkaline storage battery according to claim 12, characterized in that said intermediate layer is formed on a surface of the porous sintered nickel substrate.

14. The nickel electrode for an alkaline storage battery according to claim 12, characterized in that said intermediate layer contains cobalt.

15. The nickel electrode for an alkaline storage battery according to claim 14, characterized in that said intermediate layer containing cobalt is heat-treated in the presence of alkali and oxygen.

16. The nickel electrode for an alkaline storage battery according to claim 12, characterized in that a second intermediate layer composed of cobalt hydroxide is formed on said intermediate layer.

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17. The nickel electrode for an alkaline storage battery according to claim 16, characterized in that said second intermediate layer composed of cobalt hydroxide is heat-treated in the presence of alkali and oxygen.

18. The nickel electrode for an alkaline storage battery according to claim 12, characterized in that said lanthanoid is at least one element selected from the group consisting of lanthanum La, cerium Ce, praseodymium Pr, neodymium Nd, europium Eu, and ytterbium Yb.

19. A method of producing a nickel electrode for an alkaline storage battery, characterized in that it comprises the steps of:

forming an intermediate layer containing at least one hydroxide of an element selected from a group consisting of calcium Ca, strontium Sr, scandium Sc, yttrium Y, lanthanoid, and bismuth Bi on a porous sintered nickel substrate; and

applying an active material mainly containing nickel hydroxide to the porous sintered nickel substrate having the intermediate layer formed thereon.

20. The method of producing a nickel electrode for an alkaline storage battery according to claim 19, characterized in that said intermediate layer contains cobalt.

21. The method of producing a nickel electrode for an

alkaline storage battery according to claim 20, characterized in that, in forming said intermediate layer containing cobalt, the intermediate layer is heat-treated in the presence of alkali and oxygen.

22. The method of producing a nickel electrode for an alkaline storage battery according to claim 19, characterized in that it comprises the step of:

forming a second intermediate layer composed of cobalt hydroxide on said intermediate layer.

23. The method of producing a nickel electrode for an alkaline storage battery according to claim 22, characterized in that, in forming said second intermediate layer, the second intermediate layer is heat-treated in the presence of alkali and oxygen.

24. The method of producing a nickel electrode for an alkaline storage battery according to claim 19, characterized in that lanthanoid used for forming the intermediate layer is at least one element selected from the group consisting of lanthanum La, cerium Ce, praseodymium Pr, neodymium Nd, europium Eu, and ytterbium Yb.

25. An alkaline storage battery characterized in that the nickel electrode for an alkaline storage battery according to claim 12 is used as its positive electrode.

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26. An alkaline storage battery characterized in that the nickel electrode for an alkaline storage battery according to claim 2 is used as its positive electrode.